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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,103

08/17/2005

Robert P. Dion

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The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

RONESI, VICKEY M

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,103	Applicant(s) DION ET AL.	
	Examiner VICKEY RONESI	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/23/05, 11/6/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in the reply filed on 6/25/2008 is acknowledged.

Claim Objections

2. Claims 2-7 are objected to because the term "Compositions" does not have full antecedent basis in claim 1, on which these claims are dependent. Only one composition is claimed in claim 1 and should be referred to that way in dependent claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-8 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1, 6, and 8, the term "the polymer matrix" lacks antecedent basis.

With respect to claims 2-5, 7 and 11, they are rejected for being dependent on a rejected claim.

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Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, 8, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Avakian (US 2004/0106713).

Claims 1, 6, 8, and 11 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Avakian (US 2004/0106713).

Avakian discloses a composition that is molded (paragraph 0007) comprising a macrocyclic polyester and an electrical conductivity additive such as carbon nanofibers (i.e., carbon nanotubes (paragraph 0025 and Table A), which would inherently provide for the presently claimed conductivity of 1×10^{-5} S/cm because it is conductive and such a property is evidently dependent upon the nature of the composition used. Case law holds that a material and

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its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In light of the above, it is clear that Avakian anticipates the presently cited claims.

Alternatively, given that Avakian discloses the presently claimed invention and teaches that carbon nanotubes are added to impart electrical conductivity, it would have been obvious to one of ordinary skill in the art to prepare a composition with electrical conductivity of $\times 10^{-5}$ S/cm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian (US 2004/0106713) in view of Wang (US 6,436,549).

The discussion with respect to Avakian in paragraph 4 above is incorporated here by reference.

Avakian fails to disclose the use of a polyfunctional chain extending agent.

Wang discloses block copolymers from macrocyclic oligoesters and teaches that the design and control of elasticity, crystallinity, ductility, and molecular weight is had when they are block copolymerized (i.e., extended) with a dihydroxyl-functionalized polymer (abstract, col. 1, lines 52-60).

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Given that one can design and control elasticity, crystallinity, ductility, and molecular weight of macrocyclic oligomers by copolymerizing with a dihydroxyl-functionalized polymer as taught by Wang, it would have been obvious to one of ordinary skill in the art to use the chain extender taught by Wang with the macrocyclic polyester taught by Avakian.

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian (US 2004/0106713) in view of Carson (US 5,321,056).

The discussion with respect to Avakian in paragraph 4 above is incorporated here by reference.

Avakian fails to disclose a core shell rubber or a polyfunctional active hydrogen-containing polymer.

Ishino discloses a polyester composition and teaches that the impact strength of the composition can be substantially increased by the addition of small amounts of a core-shell impact modifier, wherein the shell is made compatible with the polyester by functionalizing it with hydroxyalkyl (meth)acrylate (col. 2, line 45 to col. 3, line 56). The core-shell impact modifier of Carson reads on both the presently claimed core shell rubber or a polyfunctional active hydrogen-containing polymer.

Given that the impact strength of a composition is greatly improved by the addition of a hydroxy-functionalized core-shell impact modifier, it would have been obvious to one of ordinary skill in the art to add the impact modifier of Carson to the composition of Avakian in order to obtain improved impact strength.

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7. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian (US 2004/0106713) in view of Patel (US 6,528,572).

The discussion with respect to Avakian in paragraph 4 above is incorporated here by reference.

Avakian fails to disclose the aspect ratio of the carbon nanotubes which are added to impart electrical conductivity.

Patel discloses a conductive polymer composition comprises carbon nanotubes and teaches that it is preferred that the carbon nanotubes (which are added to impart electrical conductivity) have an aspect ratio of greater than or equal to 100, more preferably greater than or equal to 1,000 (col. 3, lines 36-40).

Given that carbon nanotubes provide for more electrical conductivity to a polymer when the aspect ratio is greater as taught by Patel, it would have been obvious to one of ordinary skill in the art to utilize a carbon nanotube with an aspect of 150 or greater.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. On the International Search Report for PCT/US03/40722, WO 01/53379 and EP 0 589 640 were cited; however, they are not used in the above prior art rejections because they do not teach the use of carbon nanofibers (i.e., carbon fibers in the nanoscale).

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/14/2008

vr

/Vickey Ronesi/
Examiner, Art Unit 1796